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ECONOMIC RESEARCH SERVICE  
UNITED STATES DEPARTMENT OF AGRICULTURE

CURRENT PROGRAM  
and  
PROGRESS REPORT

of the

ECONOMIC DEVELOPMENT DIVISION

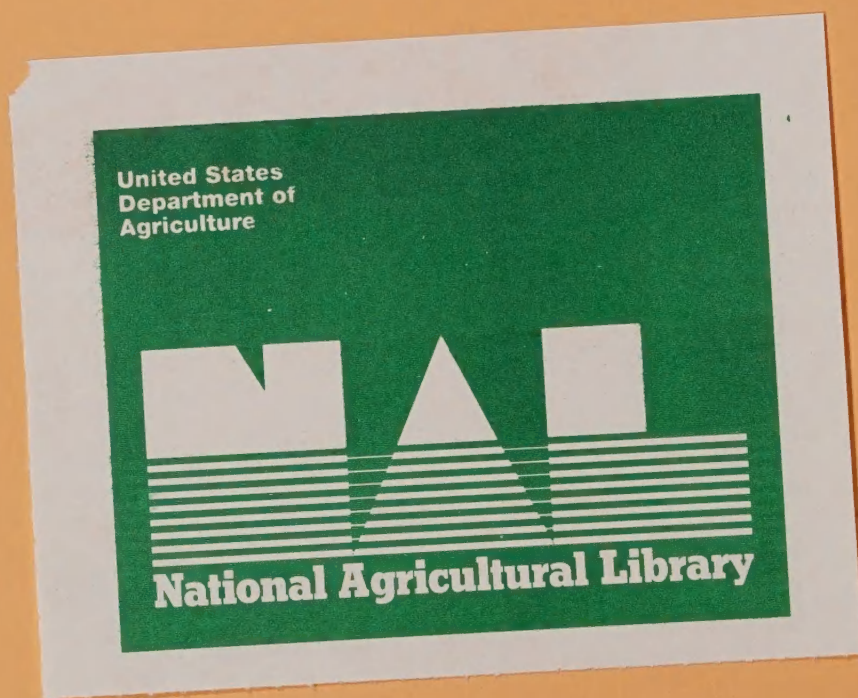
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## PREFACE

This progress report is primarily a tool for use of scientists and administrators in program coordination, development and evaluation. The summaries of progress include some tentative results that have not been tested sufficiently to justify general release. Such findings, when adequately confirmed, will be released promptly through established channels. Because of this, the report is not intended for publication and should not be referred to in literature citations. Copies are distributed only to members of Department staff and others having a special interest in the development of public research programs.

This progress report was compiled in the Economic Development Division, Economic Research Service, U.S. Department of Agriculture, Washington, D. C. 20250.

October 1970





## INTRODUCTION

Area economic and human resource development research is concerned with the well-being and economic opportunities of rural people. The work includes economics of development of rural areas, rural local government, community organizations and government and nongovernment facilities and services of a community nature, and rural population and manpower.

Public interest in improving living conditions for all citizens places constant demands on the Division for information on conditions and trends relative to rural people and local, area, and regional economies. Lack of economic opportunities for rural people also requires exploration of potentials for jobs and alternative means of achieving fuller employment and improved living conditions. Improvements that are of joint benefit to both nonmetropolitan and metropolitan residents are especially sought.

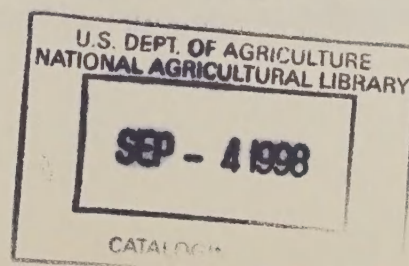
New research and policy emphases of the Department of Agriculture on community development and poverty amelioration programs place new demands on the Division for information and basic evaluation research.

The Division's program of research and related service in economic development is conducted from headquarters in Washington, D.C. and is concerned primarily with problems that are national or regional in scope.

Field studies are usually conducted in cooperation with State experiment stations and other State research agencies. Close working relationships with both research and operational programs are traditional. Cooperation in planning and conducting research avoids duplication of effort and provides opportunities for the direct application of research results.

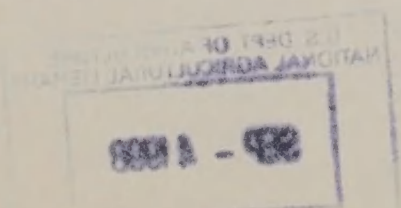
The Division consists of three Branches: (1) The Human Resources Branch, (2) the Community Facilities Branch, and (3) the Area Analysis Branch. The work of each Branch is reported by project areas. Corresponding CRIS project numbers are listed in an Appendix.

The Economic Development Division continues to answer requests and provide data and interpretation to numerous public bodies. Within the broad range of questions, dominant topics have been: (1) Where people live, where and how they will live in the coming decades, and the relation of these living patterns to the quality of life. (2) Living and working conditions of the farmworker, particularly the migrant worker, and possible measures to upgrade living conditions for this group. (3) Incentives for industrialization of rural areas and alternative instruments for upgrading living and working conditions in rural areas. (4) Poverty status of particular rural people, including ethnic and age groups, and particular geographic areas. (5) Present and proposed Federal tax laws and their effects on rural people. (6) Conceptual and methodological questions, including those on what is a "growth center," and questions relating to the role of multicounty areas or districts and regions in economic development.



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## HUMAN RESOURCES

Recent years have witnessed a growth in concern over the general welfare of rural people, especially the effects of their social and material poverty. This concern has recently extended to general debate over such questions as: Where will people live in the decade ahead? How will they live? Equally important is an emerging awareness of the consequences of underinvestment in people for individual achievement and economic development in rural areas. The need for research in the area of human resources has been augmented further by fresh debates on the role of the Federal Government in development, and by the creation of major action and planning programs, such as the work of the Office of Economic Opportunity and the Appalachian and other regional commissions. In addition, legislative and program proposals in the Department of Agriculture relating to farm workers and rural population have increased the demand for research and evaluation. The collection and analysis of basic information on rural population, migration, manpower, and related attributes such as income, education, and health are fundamental to an adequate understanding of rural problems and to the conduct of relevant action programs.

### POPULATION STUDIES

Major objectives of this research are:

1. To determine, for administrative and policy uses, the size, distribution, composition, and changes of the farm and other rural population, including small towns.
2. To provide data, for similar purposes, on the volume, direction, and composition of migration between rural and urban areas, and on the comparative social and economic effects of such movement.
3. To explore the mutual relationships of migration, mobility and rural poverty.
4. To examine the mutual relationships between fertility and migration in the rural population, including natural decrease of population.
5. To develop the implications of the above demographic features and trends for rural and other national policies.

Current progress and future plans:

#### 1. Rural population changes

Preliminary 1970 Census figures reveal that the population of counties that were entirely or primarily rural in 1960 gained by 5.4 percent during the decade, compared with a growth of 13.8 percent in urban counties. The rural counties would probably have grown twice as rapidly as they did had they not given up at least 2.5 million net migrants to urban counties in this period. Even so, this is substantially less outmigration than the rural counties



experienced in the 1950's. The most notable reversal of rural trends from loss to gain occurred in a 3-State area that includes northern and western Arkansas, Eastern Oklahoma, and southwestern Missouri. Industrial, resort, and retirement developments brought about this trend. The most widespread area of rural population loss was in the Great Plains Region, both north and south.

The estimated average farm population for the year centered on April 1969 was 10.3 million, a rather small drop of less than 1.5 percent from the preceding year.

Service work: Heavy demands resulted from: (1) the interest of the White House staff in population distribution policy issues, (2) the interest of the Presidential Commission on Population Growth and the American Future and Congressional and other citizen leaders in the same issues, and (3) general interest in early findings from the 1970 Census. Other projects were a paper on the relationships between population and the quality of the environment for the National Agricultural Policy Conference and a review of the history and status of mixed racial groups in the South for an anthropological symposium.

Future plans: Work will continue to provide timely and pertinent analyses of data from the new census, especially material bearing on the major issues of rural development and population distribution. A cooperative project with the Department of Rural Sociology, University of Wisconsin, will analyze population changes of nonmetropolitan towns in the United States, and associated factors.

## 2. Migration studies

Data tapes have been received from the 1967 Survey of Economic Opportunity. Data on rural-urban migration and its relationship to poverty are being produced from this source under a contract with the Office of Economic Opportunity. The basic tabulations have been made and a chartbook is being drafted. Three papers were given on the subject at the annual meeting of the Rural Sociology Society. In general, the data show that about 40 percent of the adult population of rural origin lives in urban territory, and these people comprise about 20 percent of the total urban adult population. The incidence of poverty among them is somewhat higher than among urban natives. (12.1 percent vs. 9.4 percent), but is much lower than that of the remaining rural residents (21.9 percent). Only 5.5 percent of the rural-to-urban migrant families reported receiving any public welfare income in the preceding year. In general, the data verify the fact that millions of rural-reared people live in cities, but these people are not disproportionately poor or heavily dependent on public welfare.

The estimate of 198,000 net migrants from farms was one of the lowest in recent years.

Service work: Continued public interest was reflected in requests for information on migration. However, the high peak of interest that followed the extensive urban riots of 1968 has receded.



Future plans: Processing and publication of data from the Survey of Economic Opportunity will continue. Assistance will be provided on demand to the Bureau of the Census in preparing 1960-70 decade estimates of net migration by counties. The regular estimate of net migration from farms will also be published.

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#### MANPOWER STUDIES

Major objectives of this research are:

1. To provide a comprehensive and continuing description of the rural labor force in a rapidly changing economy.

2. To determine the economic and social consequences of manpower, rural development, and social welfare programs.
3. To provide information to improve income opportunities in rural communities.

Current progress and future plans:

1. Hired farm working force

An April 1970 statistical report presented data on employment and earnings of the hired farm working force of 1969. About 2.6 million persons of the civilian noninstitutional population 14 years old and over worked on farms for cash wages in 1969, a decrease of 11.9 percent from 1968, reflecting further application of labor-saving technology despite record high production of crops and livestock. In 1969 casual workers numbered 1.1 million, about 193,000 less than in 1968. Noncasual workers numbered 1.5 million, about 154,000 less than in 1968. The average hired farmworker earned \$10.75 a day in cash wages from farm wage work in 1969, working an average of 78 days, and earning \$837. This was little change from the \$10.55 per day, 79 days of work, and annual earnings of \$834 in 1968. Earnings of workers doing some nonfarm work increased significantly. Daily nonfarm wages rose \$1.20 per day to \$15.40; and the number of days of such work increased from 36 to 40; total annual nonfarm earnings rose from \$512 in 1968 to \$616 in 1969.

The migrant farm wage work force declined by 22,000 -- from 279,000 in 1968 to 257,000 in 1969 -- and is expected to decrease by a similar amount in 1970, with further mechanization of such crops as sugarbeets, pickles, cherries, and blueberries.

The composition and characteristics of the hired farm work force changed little from 1968 to 1969. About 21 percent of the total work force were employed chiefly at farm wage work during the year; and about 60 percent (mainly housewives and students) were not in the labor force most of the year. Two-fifths of the farm wage workers (1.1 million persons) did both farm and nonfarm wage work. Seventy-four percent were males, 77 percent were white, 35 percent were young people 14-17 years of age, and 74 percent were nonfarm residents.

Service work: Staff worked on these four Departmental presentations to the Congress: (1) Hearings on Migrant and Seasonal Farmworker Powerlessness, (a staff paper responding to specific questions from the senate Subcommittee was also prepared and presented as a part of this testimony); (2) The Changing Structure and Size of Agricultural Operations, in connection with a proposed Amendment to extend and improve the Federal-State unemployment compensation program; (3) Facilitating Farm Labor-Management Relations in Agriculture (Collective Bargaining); and (4) An Analytical Summary of Developments in the Grape Strike Issue.

Staff participated in an interagency project on migratory farmworkers, and acted as informal coordinator of the Department's efforts. As part of this activity, a number of papers were prepared to help bring the migratory



situation into perspective, evaluate the job outlook, and estimate the extent of displacement in fruits, vegetables and sugarbeets in 1970.

Staff represented the USDA in the Inter-agency Committee on Manpower Research (ICMR), which includes coordinating activities, presenting relevant research activities of the Department, and developing the USDA portion of the Committee's annual reports on Manpower Research.

Staff acted as the Department coordinator and representative for the Census follow-on survey on barriers to employment in rural areas. They helped in the preparatory planning for the survey, pretesting of the survey instruments, and developing the tabulation specifications for publication of the data obtained.

Materials relating to various manpower matters were prepared for guidance of the Administrator, the Secretary, individual Congressmen, Congressional Committee Chairmen, and others. In some instances, this involved considerable cooperative effort, such as that involved in:

- Reviewing state and federal materials to determine applicability of the several proposals for extending unemployment insurance to hired farmworkers.
- Reviewing and commenting on proposals and recommendations for the International Labor Organization throughout the year.
- Briefing members of the Department on collective bargaining activities in agriculture, responding to congressional inquiries on the grape strike, and on other current issues and manpower proposals.

Staff analyzed proposed legislation for the Department, including bills proposing to establish a comprehensive manpower development program to assist persons in overcoming obstacles to suitable employment, provide for the establishment of a council to be known as the National Council on Migratory Labor, facilitate orderly and peaceful relationships between agricultural employers and employees in order to protect the availability, quality and price of food products (labor-management relations), amend the Public Health Service Act to extend the program of assistance for health services for domestic migrant agricultural workers and for other purposes, encourage the States to extend coverage under their State unemployment compensation laws to agricultural labor, the Department of Labor's draft bill, Employment Security Amendments of 1969, and HR 14705, Employment Security Amendments of 1970.

Numerous communications from a range of citizens and organizations on various subjects, including collective bargaining, the grape strike-boycott issue, unemployment, displaced farmers, hunger, welfare, migrant workers problems (about 225 letters were written solely in response to the NBC White Paper on migrants), were prepared in response to communication to, and at the direction of, the Secretary and the President in addition to servicing routine inquiries.



Future plans: Non-series portions of the Hired Farm Working Force surveys will be analyzed. Further work will focus on identifying nonfarm industries that provide seasonal jobs for farmworkers and what these nonfarm jobs are.

A cooperative study with Michigan State University and the U.S. Department of Labor on the policy implications of fruit and vegetable harvest mechanization will be completed and published as Michigan State University Rural Manpower Center Report No. 18 during 1970.

Analysis of data from the 1967 and 1968 June Enumerative Surveys of the Statistical Reporting Service will center on persons performing farmwork by the type and economic class of farm, and on the employing farms by size of wage bill.

## 2. Other rural manpower studies

A joint study with the Farm Production Economics and Marketing Economics Divisions indicates large numbers of people are still employed in the production, marketing, and processing of flue-cured tobacco in the Southeastern United States. During 1967, about 295 million man-hours of labor were required to produce the Nation's flue-cured tobacco crop. Current technology, if adopted without restriction by Government programs, could reduce labor input in tobacco production by about half. Full mechanization of the tobacco industry, however, tends to be inhibited by economic and institutional forces. Uncertainty about future demand for tobacco products influences investment decisions of farmers. Government tobacco programs, which limit acreage and production and restrict leasing and rental arrangements, are barriers to the adoption of full-scale mechanization.

Two inventories of Department manpower research were prepared as part of the Department's membership and participation in the Interagency Committee on Manpower Research (ICMR). These are the second and third volume in an annual series developed and sponsored by the Committee which brings together manpower research studies sponsored by various Federal agencies. The Committee, which was formed to strengthen and coordinate the research efforts of the Federal Government in the field of manpower, defines manpower as man and his world of work. Subjects covered range from pre-school education through various aspects of jobs and work and into retirement. The annual volumes are intended to extend the boundaries of knowledge on manpower and increase the awareness of research activities directed toward manpower issues and problems. Included in the volumes are selected manpower studies performed or sponsored by agencies of the seven Departments constituting the ICMR which were completed during the fiscal years ending June 30, 1968, (Vol. 2) and June 30, 1969 (Vol. 3). Reports on these studies have been abstracted and indexed by the Educational Resources Information Center (ERIC) Clearinghouse for Vocational and Technical Education at Ohio State University and reproduced through the facilities of the ERIC system.

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McElroy, Robert C. The hired farm working force of 1969. Econ. Res. Serv. AER-180, 30 pp. April 1970.

Rowe, Gene A., and McIlwain, Clara E. Farm employment, wage rates, and earnings estimates. Major Statistical Series of U.S. Department of Agriculture. How they are Constructed and Used. Agr. Handbook 118, Vol. 7, Ch. 2 (Rev.): 17 pp. November 1969

Taylor, Lee J., and Paul Leagans, editors; Bauder, Ward W., et al., associate editors and contributors. Workers in agribusiness. Cornell Agricultural Experimental Station, Bul. 1029, March 1970

## INCOME AND LEVELS OF LIVING STUDIES

Major objectives of this research are:

1. To develop and analyze measures of relative socio-economic and institutional well-being and relate to pertinent demographic, social, and economic data.
2. To develop and analyze data relating to the social and economic status and problems of specified groups of persons and specified geographic areas of the country.
3. To analyze and measure the relative economic effectiveness of human resource utilization by sex, age, and educational characteristics for geographic areas and economic activity sectors.

4. To discern and measure the causes of differential income earning capacities among persons for geographic areas and economic activity sectors.

Progress and future plans:

1. Economic utilization and incomes of persons

Techniques for estimating the relative economic utilization of manpower have been refined to recognize the effects of occupational structure, and the relative purchasing power of income on comparable real income earning capacities for populations grouped by counties or residential classifications.

Estimates of the relative economic utilization of manpower have also been developed for 6 groups of U.S. counties classified by the size of the largest population center, and arrayed by the median money income of males and of females.

Service work: The major service activity involved consulting with OEO personnel on the use of county estimates of underemployment, and preparing explanatory materials concerning the techniques, meaning, and possible uses of these estimates.

Future plans: (1) Data from the 1970 Census of Population will be machine processed to obtain economic utilization of manpower estimates. (2) For several recent years, relative economic utilization data estimates will be made for the hired farm work force that is most dependent on farm work. (3) Special analyses will be made of survey data already collected in the East North Central and Delta States.

2. Relative well-being of persons and areas

All U.S. counties with some rural population have been ranked according to the relative affluence status of their rural population. The ranking is based upon an equally-weighted composite of ranks on five factors. The following types of county data have been developed: (1) the availability of health personnel and facilities, (2) the number of school-age children by family income groups, (3) the number of children ever born per 1,000 women age 35 to 44; and (4) populations by residence, color, and age.

Data and analyses have been developed concerning the characteristics of change in well-being during the 1960's for 350 predominately rural counties (all of which in 1960 fell in, or very near, the lowest quintile of U.S. counties ranked according to the relative poverty status of their rural populations). These counties comprise 5 areas of contiguous counties representative of: Southern Appalachia, the Southeastern Coastal Plains, the Mid-South, the Mississippi Delta, and the Southern Rio Grande Valley.

Future plans: Refinements will be made of specifications for obtaining from 1970 Censuses of Population and Housing data which will permit analyses of the relative well-being of rural populations for U.S. counties with comparisons



to the well-being of other residential population groups. Further work will center on defining attributes of quality of living and identifying instrumental factors associated with these attributes.

Service work: Information on the well-being of rural population by counties has gone to Congressional staffs, community action agencies and university and private researchers upon request.

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Youmans, E. Grant. Some perspectives on disengagement theory. Gerontologist. (Winter), Part I, 1969, 9:254-258.

#### POVERTY ANALYSIS

Major objectives of this research are:

1. To identify the socioeconomic factors associated with poverty.
2. To examine differences in the content and meaning of poverty among areas of varying poverty concentration.
3. To examine mechanisms for escape from poverty, including intergenerational social mobility.
4. To investigate the problems of communication with rural low-income people in the operation of anti-poverty programs.

5. To examine the implications of various proposals for ameliorating poverty and to simulate the operations of these proposals among known populations.

Current progress and future plans:

1. Structure of Rural Poverty

Preliminary analyses of relative deprivation in the East North Central States and South Central Tennessee have been completed. Other areas examined have included the Mississippi Delta, the Ozarks, and the Southeastern Coastal Plain.

Some 11 percent of the open country rural households in the East North Central States were poor in 1967. Those hit hardest were the households headed by the aged, the disabled, and small farmers. About half the poor in the study were in consumer units headed by healthy individuals under age 65 -- those who could earn an adequate living if properly trained and placed in a job. The other half were likely candidates for income transfer payments. Seventy-two percent of the poor households with the head under 45, and 57 percent of those with the head aged 45-64 reported no income from transfer payments. One-third of the poor heads 45-64 were widows, early retirees, or seriously disabled. The approximately 4,000 households in the study were all white and about one-third were farm households.

A study of 890 households in the Elk River-Duck River area of South Central Tennessee showed they had only 3.5 members per family and had a median annual income of \$3,334. Thirty-five percent were poor in 1968. The study concerned residents of open country, predominately white and nonfarm. Two-thirds of the household heads were in the labor force and 86 percent of the labor force was employed full time. Most employable people shifting out of agriculture have found other jobs providing incomes above the poverty level. Almost half the poor households were headed by individuals 65 or older and nearly 70 percent were 55 or older. The proportions of all heads in these age groups were 28 percent and 49 percent, respectively. One in every three households of "farmers and farm managers," was poor. A third of the households in the study indicated that their youngest child had dropped out of school.

One-fourth of all rural Ozark households were classified as deprived, based on a 1966 income-family size criterion. Of these rural poor, over half were 65 years of age or older and a fifth were under 65, but disabled. Also, 7 percent were headed by females who had less than 5 years of schooling. Thus, approximately four-fifths of these rural poor had physical or other conditions that limit their employability. Approximately half of all rural heads of Ozarks households less than 50 years of age had at least one child who failed to graduate from high school, while the rate among families with at least one dropout was 80 percent. Dropout families had disproportionately low levels of education and income and no spouse. Parents did not value education highly.

Two-thirds of the deprived rural youth in the Northeast Coastal Plain of South Carolina in 1966 were in households headed by able-bodied males. Thus, they were ineligible for most types of welfare assistance despite their household per

capita incomes of about \$300. Migration of rural youth from the Northeast Coastal Plain of South Carolina was highly selective with respect to race and education. Two-thirds of the Negro youth migrated from the area -- mostly to cities of the northeastern United States. While about half of the white youth also left the area, most of these remained in South or North Carolina.

Three different facets of the low income problem in the rural Mississippi Delta Region are being investigated using data from the Delta typologies of poverty study: (1) individual migrants from Delta households; (2) labor force participation by Delta residents; and (3) the effects of specified programs on employment and income in the Region. Compared to nonmigrants, migrants in 1966 were younger and had more years of formal schooling, irrespective of age, sex, or race. Within limits, a significantly higher labor force participation rate was found for poverty households than for more affluent households. The potential impact of the manpower services, training, and employment component of the proposed Family Assistance Act of 1969 has been studied.

Service work: In addition to service activity by professionals in the field, Washington staff provided 0.7 man-years.

Future plans: Further analysis of data collected in the East North Central States and the Mississippi Delta is anticipated. Other reports will be completed by June 1971.

## 2. Poverty Escape Potential

A study of poor family heads in rural areas of the Mississippi Delta Region revealed that household heads with high propensity for change in 1966 tended to be in the younger age groups, married, heads of smaller households, Negro, and to have a comparatively high level of education. Generally similar factors influence change potential among the relatively affluent in the Delta. The rural poor had lower rates of social participation and higher rates of fatalism than the relatively affluent individuals in the Delta. However, contrary to prevailing assumptions, neither of these characteristics was related to propensity for change. Thus, social participation and fatalism do not significantly affect these individuals' potential for upward social mobility.

Future plans: A sample of poor families in the Appalachian area of Pennsylvania previously interviewed in 1967 has been reinterviewed to detect any changes in socioeconomic status, along with the reasons for change or lack thereof and practical implications. An assessment of how much economic development and job creation enable people to escape from poverty has been undertaken at the request of OEO. The study will focus on 4 areas: Northeast Mississippi, the Arkansas Ozarks, a Concerted Services pilot area in the Delta of Arkansas, and an Indian area in northeast Arizona. Employees of new and expanded firms will report their relative status before and after their new jobs.

A study will evaluate factors associated with the "escape" from poverty among a sample of 400 young male household heads who have remained in the Mississippi



Delta. The sample comprises poor Negro and white household heads under 45 years of age. Kinds of information to be obtained include: Intergenerational status vis-a-vis current status, perception of institutions and organizations, assessment of three personality (attitude) characteristics and participation and involvement in organizational activities. Factor analysis and other multivariate techniques will be used.

### 3. Implications of antipoverty proposals

Data from the 1967 Survey of Economic Opportunity were projected and used in simulations of the impact of the alternative Food Stamp proposals on target populations and program costs. The same negative tax computer model was also used to examine the likely impact of the proposed Family Assistance Plan.

Projections of the population-of-need and costs of programs in child feeding by schools and day-care-centers (breakfast, snacks and lunches) were made annually through 1976 for free and full-priced meal recipients.

The economic rationale associated with liberalizing food stamp issuance schedules was spelled out.

Patterns of home food production in poverty farm households were analyzed.

Service work: Major service activities related to the provision of information to the Office of the Secretary, HEW, and individual Congressmen on the costs and benefits of alternative food stamp program provisions, and the development of briefing materials for interagency groups on the application of the Family Assistance Plan in rural areas and farm communities.

Other staff work included: Membership on the U.S. Office of Education Task Force on Rural Education; membership on the Task Force to develop Departmental income poverty guidelines for free and reduced-price school lunches; membership on the Departmental committee to follow up on the recommendations of the White House Conference on Food, Nutrition, and Health.

Future plans: Studies will relate changes in school lunch prices to participation in the school lunch program.

Projections of the costs and benefits of Food Stamp and welfare programs will be updated and refined. Residence and regional projections will also be examined.

### PUBLICATIONS: POVERTY ANALYSIS

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## COMMUNITY FACILITIES

Adequate community facilities are essential to economic development of rural areas and adequate economic and social opportunities for rural people. Hence, it is important to understand why some communities have inadequate facilities and how to better provide these services.

Steadily growing financial requirements for schools, water and sewer systems, roads, and other governmental facilities severely strain current sources of State and local tax revenues. Research is needed on problems of financing governmental services in rural areas and suburban fringe areas, including consideration of the effects of taxation, possible alternative sources of revenue, the process of planning for expansion of community facilities, and the role of governmental services in economic development. New forms of governmental organization and new financial arrangements are being tried. Research can analyze and evaluate this experience and make the findings available to other communities facing similar problems.

Suitable housing, sufficient capital and credit for housing and other business uses, adequate transportation, water, sewer, electric and other utilities, medical facilities and other community facilities are needed for economic development. Research is needed to determine and analyze the social and economic factors which affect the quantity and quality of housing, the availability of capital and credit for nonfarm uses, and the quantity and quality of other nongovernmental community facilities in both low-income and high-income rural areas.

The research program comprises two subareas: (a) Rural government, and (b) Rural housing and community facilities. Research on rural government includes sources of revenue for rural government, local government structure and organization, and the effects of governmental services on economic development. Attention is given to tax proposals, Federal, State, or local, that appear to have important consequences for rural people and rural economic growth. Work on rural housing and community facilities consists of the collection and analysis of data to determine the current status of housing and community facilities in rural areas; to ascertain causes of inadequate facilities; and to suggest ways of improving both the quantity and quality of facilities and services.

### GOVERNMENT SERVICES

Major objectives of this research are:

1. To determine the relationships between specific public services and economic development.
2. To develop means of measuring the level and adequacy of government services.



3. To develop better information on the advantages and disadvantages of alternative organization of local governments.
4. To provide a better understanding of the effects of alternative means of financing government services.

#### Current progress and future plans:

An article in the 1970 Yearbook of Agriculture points out that public services in rural areas often are inferior to those provided in urban areas. This is especially true of services financed from local revenue. Among the most common areas of inadequacy are education and health services. Other sources of revenue are being investigated.

Analyses of revenue sources of local government units in the Pacific Northwest indicate that significant shifts in available funds have taken place among various size groups of municipalities in Washington State. Municipalities with a population ranging from 5,000 to 25,000 realized an increased share of total revenues accruing to cities and towns during the period 1957-67. These results reinforce the belief that smaller rural towns (less than 5,000) appear to be at a comparative disadvantage in securing funds for public services. Three communities characterized by population stability, growth, and decline during the period 1930-65 were selected. Analyses are underway to determine the pattern and timing of capital investments in public services for each community and to isolate critical elements in the local decision making process with respect to such investments.

A recent paper on public health services in 67 rural counties reports a positive relationship between medical needs and quality of services. Although this relationship was found to exist, it was not possible to establish a level of adequacy of the services.

A study of the availability of general hospital beds, skilled nursing home beds, Medical Doctors (M.D.'s), Doctors of Osteopathy (D.O.'s), and Dentists in Michigan's counties indicate that some assumptions should be modified. When socio-economic characteristics were held constant and measures of rurality studied separately, estimated availability of hospital beds, skilled nursing home beds, and D.O.'s decreased and Dentists increased if no town as large as 5,000 was present within a county. Studying discrete variables for distance from a city of 25,000 population, the number of general hospital beds was highest for areas more than 50 miles and was lowest for areas within 25 miles of such a city. Estimated nursing home beds, D.O.'s and Dentists were highest for areas between 25 and 50 miles and were lowest for areas more than 50 miles away. M.D. availability was related to the level of disposable income and not affected by rurality variables. Decennial data were collected and analyzed for unincorporated places under 1,000 population in non-SMSA counties of Michigan from 1940-1969. These data were combined with Census data. Despite a trend toward more people living in towns, their growth did not generally keep pace with the growth in the rural countryside. Since unincorporated places under 1,000 population were included, the non-SMSA population appeared to disperse into open-country living between 1950 and 1960.

A published study of the relationships between different measures of expenditures and pupil achievement found no correlation between per pupil spending and achievement test scores. It did, however, find that per teacher expenditure had a statistically significant correlation with pupil achievement. This study relates directly to continuing work on measures of the quality of education.

A report on the quality of elementary and secondary education in North Dakota found a direct relationship between quality of education and size of school, by all measures used.

A study of measures of quality education is nearing completion. The data show rural education ranks below that of urban areas on the basis of both the products of the education system and the resources which go into it. Because of low funding and inefficient size of school districts rural areas have had, for example, difficulty attracting and keeping qualified teachers. Salaries, an important measure of quality, are low in rural school districts and are not competitive with urban and suburban school systems. Teachers in rural areas often have substandard qualifications. Although most now have Bachelor's degrees, one study found that less than 20 percent had Master's degrees and over 40 percent had less than five years' experience. Nevertheless, teachers are frequently called upon to teach several classes and are often thrust into areas in which they are unprepared. As a result, educational quality (as defined by achievement test scores) is lower in rural than urban areas.

Other quality measures relating to facilities, curriculum, school and district size, and expenditures also suggest the quality of rural education is inferior to urban education.

A selected bibliography on county and county-township government in the Great Plains and adjoining States was compiled and published. A study of township needs for facilities and services, as seen by township officials, found that roads, planning and zoning, recreation services, municipal sewer systems, medical facilities and services, industrial development, and garbage and trash disposal were among the most commonly mentioned needs for improvement.

A recent study showed that the establishment of new manufacturing plants in five towns in Kentucky often added more to local government costs than it did to revenues. However, the net additions to costs were relatively small; in general, they would not raise serious problems for local governments if they were anticipated and planned for. The largest cost increases were in instances where the plant attracted many workers from outside the county. School districts were most likely to experience substantial increases in costs; county governments were least likely. Effects on incomes of people in the area were not studied.

A study to estimate the amount of farm personal property tax levied on farmers from 1950 to 1967 was completed. It shows taxes on farmers' personal property totalled about \$382.5 million in 1967. This amount has more than doubled since 1950. But, these taxes have increased less rapidly than those on farmers' real estate. In 1967, personal property levies represented 17.1 percent of the total property tax bill. This proportion, which reached a peak of 22.0 percent in 1952, has declined almost every year since then. In

the future, personal property taxes are apt to represent a smaller proportion of the total property tax bill paid by farmers because an increasing number of States are exempting it. In 1967, six States did not tax personal property. Since then, three other States have passed laws exempting all classes of personal property from taxation. Livestock, farm machinery, motor vehicles, and household goods are the major classes of personalty taxed. In 1967, livestock represented about 55 percent of the total personalty taxed; farm machinery, 27 percent; motor vehicles, 14 percent; and household furniture, 4 percent.

Preliminary estimates indicate that taxes levied on farm real estate by State and local governments in 1969 increased 9.5 percent above the amount levied in 1968. This rate of increase is lower than the 11 percent rise from 1967 to 1968, but is still one of the highest rates of increase in recent decades. These taxes totalled \$2,263 million, compared with \$2,067 million in 1968. Taxes levied per acre averaged \$2.24 in 1969 compared with \$2.05 in 1968. Taxes per hundred dollars of full value increased to \$1.00 in a continuation of last year's rate of change. Farmers pay about 10 percent of the total real estate tax levies. This tax is the major support of local government and the public school system of our country.

A report on a revision of the farm real estate tax series for 1950 to 1967 was published. Major findings were reported last year. The report showed small downward revisions in estimates of the farm real estate taxes.

Efforts to maintain information on the current status of differential assessment plans in the U.S. continued. An article summarizing the present situation and discussing the effects of differential assessment was published and another paper on this subject was prepared for a regional seminar.

Service work: Considerable service work was done in suggesting answers to Department and Congressional letters on taxation and governmental finances.

Future plans: Within the resources available, this group expects to emphasize the same three areas mentioned in last year's report: (1) Improved ways of measuring local government services and to apply these measures to find out more about needs for improved services and ways to improve them; (2) analyses of alternatives to the property tax for local support, including non-property taxes, State and Federal aids, shared taxes, etc.; and (3) attempts to learn more about the decision-making process for governmental activities in local communities.

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## RURAL HOUSING AND OTHER COMMUNITY FACILITIES

Major objectives of this research are:

1. To develop and analyze data on the size, condition and adequacy of housing in rural areas.
2. To identify the socioeconomic factors which affect the quantity and quality of rural housing.
3. To determine the cost of remedial measures needed to improve the quality of housing, especially for the poor, and to analyze alternative ways of improving housing.
4. To determine the reasons for the greater difficulty of obtaining mortgage credit in rural areas as compared with urban areas, and remedial measures which might be undertaken, both private and public.
5. To determine the socioeconomic impact of various types and levels of financial assistance in increasing the incomes of rural people.
6. To analyze the adequacy of nongovernmental facilities and services in rural areas, particularly those relating to water, sewage disposal, medical care, and commuting systems, and to analyze alternative ways of improving these facilities.

Current progress and future plans:

A study of the current status of rural housing was completed. It shows the quality of rural housing has improved considerably since 1960. In 1968, four-fifths of the occupied rural housing was standard as compared to two-thirds in 1960. New construction and renovation during the decade of the 60's outpaced the formation of new households in both rural and urban areas and led to an improvement in quality. Yet rural housing is still inferior to urban housing. A 1968 census survey showed 17.1 percent of the units outside metropolitan areas were substandard as compared to 5.7 percent in the central cities and 4.0 percent in the suburbs. Also, rural blacks and other minority groups have decidedly lower quality housing at all income levels than does the rest of the rural population. This lower quality applies to both renters and owners and does not necessarily reflect differences in personal preferences. As reported many times in the past, credit is still less available and more expensive in rural areas than urban areas. The Farmers Home Administration is helping to fill this gap but their loans are being made to low to moderate income groups. The very poor households are not getting housing loans at all.

A study of various socioeconomic factors affecting the quality of housing in the Ozarks in 1966 was completed. It showed household income was the most significant factor affecting quality. Yet, this relationship was far from being comprehensive. Of the households with incomes that placed them in the seriously deprived class, only 63 percent lived in substandard housing, whereas 37 percent were living in adequate housing. Even in the most affluent of the five economic household classes, 20 percent were living in

substandard housing. Besides income, three other socioeconomic factors were found to be significantly related to housing quality. These were level of formal education of head of household, education of the wife, and the type of employment of the household head. Several factors which are commonly assumed to be related to housing quality were found not to be significantly related. Two of these were age of household head, and whether the household head was male or female. Apparently, many of the aged and widowed had acquired adequate housing before their incomes were reduced; female heads apparently placed considerable emphasis on having a modern home. Farm housing was found to be about the same quality as rural nonfarm housing. Renters did not occupy significantly poorer housing than did owners. This condition may exist because a considerable number of homes have been vacated in recent years and only the better housing was rented in 1966. The data suggest that programs to improve incomes and education would help to eliminate much of the substandard housing in the Ozarks.

A bulletin describing housing conditions in the Coastal Plain Area of South Carolina in 1966 showed the condition of housing occupied by black households has improved very little since 1960, whereas housing occupied by whites improved a great deal. Major findings were reported last year.

A study of the effects of income, race, education, and other socioeconomic factors on the quality of rural housing in South Central Tennessee in 1968 is nearing completion. Preliminary data indicate that household income is the major factor related to housing quality. Amount of rent paid, education, type of work, and other factors associated with income were also closely associated with housing quality. A majority of the white as well as the black occupants owned their homes. However, one in five black households was rented as compared with slightly more than one in ten white households. One-fourth of the homes lacked piped water. The quality of housing occupied by blacks was considerably poorer than that occupied by white families. Sixty-eight percent of the housing occupied by blacks was substandard as compared with 31 percent for white households. Tenure was also a determinant factor in housing quality. Thirty-five percent of the owned housing was substandard, whereas 59 percent of the rented housing was substandard. Although a positive relationship was found to exist between income and quality of housing, other economic, social and cultural conditions prevailing within the community appear to be significant determinants of housing quality.

A study of rural housing conditions in the Mississippi Delta is nearing completion. Data show that one-half of all occupied rural dwellings in 1966 did not have a bathtub, shower, or a flush toilet. One-fourth lacked piped water in the home. The quality of housing was lower among those units for which no cash rent was paid. Occupied units for which no cash rent was paid constituted a particularly acute problem as neither the owner nor the renter has much of an incentive for making the necessary investment to upgrade the adequacy of the home. Substandard housing, low income and low valued housing were far more prevalent among black households than white households.

A study of selected characteristics of open country mobile home residents in the East North Central Region of the U.S. in 1967 is near completion. Preliminary results indicate that mobile home occupants tend to be young;



48.9 percent of the household heads were younger than 35 years. Older residents were also well represented, as 21.4 percent of the heads were 65 years of age, or older. Household incomes of occupants were lower than the national and regional averages with 79.4 percent having earnings under \$8,000. This compares with a national figure of 50.2 percent. Mobile home household heads also had less education, as only 38.9 percent had graduated from high school, compared with 52.9 percent of the household heads in the U.S.

Service work: Considerable service work was done in projecting rural housing needs and related matters for the Farmers Home Administration and the Interagency Task Force on Rural Housing.

Future plans: Initial studies of the impact of credit on rural housing, based on the in-depth interviews in the Ozarks, the Mississippi Delta, East North Central States and South Central Tennessee will have been substantially completed by July 1971. Research efforts will be shifted to analysis of 1970 Census of housing data to determine the current status of rural housing, the availability of housing and community facilities, the progress that has been made in the areas of inadequacy, and the possible effects programs may have had in improving housing conditions. Other areas to be emphasized include studies of the impact of mobile homes on rural areas and their potential in rural development, and studies of the effect of credit and credit policies in helping to provide adequate housing in rural areas.

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Hurst, Robert L. Rural Housing in the Northeast Coastal Plain Area of South Carolina, AER No. 163, July 1969. 18 pp.

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## AREA ANALYSIS

This research seeks to describe and explain the economic environment of rural people, including those living in both slower growing and faster growing geographic regions of the United States. The research covers all the counties and county-equivalents of the United States. Primary focus is on areas or groups of counties with actual or potential economic and social interdependency. Counties are combined into multicounty areas for description and analysis, and/or classified according to variations in the kinds of local population, income, and employment problems. Studies of regional and sub-regional variations in key attributes of particular areas and types of areas, such as population, employment, income, productivity, markets, and natural resources attempt to isolate priority factors associated with these variations and spell out implications for development. Major economic adjustment problems are identified, particularly those that have direct implications for rural people. Most of the data used is available from Census sources and is stored for processing by electronic computers. Data files are shared with other agencies concerned with staff support for economic development activities.

## BASIC GROWTH STUDIES

Major objectives of this research are:

1. To develop improved data processing methods for handling and summarizing meaningful data drawn from the vast array of available statistics relating to measures of area economic activity.
2. To develop economic profiles, current situation statements, and assessments, of prospects for economic growth in slower growing rural areas.
3. To develop comparative analyses which delineate economic factors affecting growth, and point to workable economic policies.
4. To develop aggregative models of local area growth and of cyclical behavior.
5. To appraise regional variations in factors affecting demand for local products, supplies of resources, resource productivities, and institutional arrangements for economic expansion.

Current progress and future plans:

1. Data assembly and processing for rural area analysis

Data file subsets relevant to area analysis research have been extracted from massive data files into more manageable proportions to reduce turnaround time and processing costs. Multicounty area codes and codes involving functional relationships among the counties of the United States have been added to these subsets. Computer programs are available to aggregate county data ranked by these codes into new files for Quick Query processing, or for interfacing with existing and newly prepared utility programs, providing statistical algorithms through the use of selections from sets of parametric options.

New data included in the Quick Query data bank are Personal Income by type and source for the SMSA's and non-SMSA counties of the United States, 1929-1958, compiled by OBE. Data from the 1970 Census of Population, 1964-1969 employment by industry and unit size from County Business Patterns, and 1969 Census of Agriculture will be added as they become available. As a continuing effort, adequate levels of competence are being maintained and expanded from computer programming support, consultation, and data processing services. Computer facilities are finding increased use by researchers as standardized program packages are developed with minimal input specifications.

2. Patterns of rural growth in the 1960's

Analysis of population and employment changes and interrelationships in non-metropolitan and metropolitan labor market areas in the 1960's shows that employment in manufacturing and construction has increased more rapidly in the smaller than in the larger labor markets. Other industry rates of change have been charted and show that rural growth counties have lower but excellent rates of growth in services, finance, trade and transportation. The results of this study were published.

3. Impact of highway investment on regional economic development

A report in process concludes that highways are not a crucial factor in the development of the Ozarks Region. If highways are built, those that would do most for economic development are: (a) Two-lane paved, state-numbered roads integrated with existing national routes and (b) local, paved county roads connecting rural hinterlands with urban centers. Highway relationships with incomes and employment were statistically analyzed by means of rank correlation and stepwise regression. All highways and roads administered by county, state, and turnpike authorities were included in this study. Highways were classified into five distinct types and three composite networks using the number of lanes, type of surface, and network integration as criteria. The overall access network - comprised of multilane, U.S. numbered and state numbered highways - was more correlated with incomes and employment than were any of its specific components.



#### 4. Analysis of the Lake of the Woods - Rainy Lakes Region of Minnesota

Preliminary analysis of the natural resource base, population, income, housing, and wholesale and retail trade in this area has been completed. Investigation of State aids to education and the property tax revealed that the burden of financing education in the past 10 years has shifted further from State aids to the local property tax. The economy has been analyzed using the Fisher-Clark approach, economic base, and shift-share analysis. Projections to 1985 show the continued importance of agriculture and considerable expansion of service activities. An input-output analysis is nearing completion. Specific sectors such as agriculture, fishery, forestry, and tourism have been partially analyzed.

Future plans: Staff will continue to assemble and make operational through automatic data processing current data on income, population and employment to service the current research of the Branch and the Division; develop composite indexes of economic well-being for counties and multicounty trade areas and relate to urbanization patterns; develop a concise statistical description of economic and social characteristics of counties and selected multicounty areas; identify economic and social factors affecting economic development, and spell out program implications.

#### PUBLICATIONS: BASIC GROWTH STUDIES

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#### ECONOMIC STRUCTURES GROUP

Major objectives of this research are:

1. To develop estimates of economic structure such as input-output matrixes, simultaneous equations, and simulation models.
2. To place in national and meaningful sub-national perspective the prospects for economic development in particular multicounty areas and types of areas by relating changes in local, regional and national demand for and supply of factors and products to the local supply of factors and products, and to the local economic structure.
3. To develop and apply criteria for meaningful area delineation.
4. To develop and maintain a data bank on multicounty planning and development districts.

## Current progress and future plans:

### 1. Area delineation

The U.S. was divided into 482 Basic Economic Research Areas (BERA). These areas comprise adjoining counties that are interrelated economically and socially. Areas may cross state lines but not county lines. Secondary data will now be developed on this base to examine economic development of BERA as related to selected structural characteristics. Another method of delineating areas was developed, emphasizing the gravity model (i.e., a model that relates distance and population of the central city to economic interdependence) to determine functional areas. Counties that depend more on economic activity within the county than with any contiguous counties ("core" counties) were identified. Three hundred and ninety core counties were identified. The original delineation will be modified slightly to allow the "core county" to be a multicounty SMSA. Functional areas will be evolved by aggregating noncore counties to complementary core counties. These functional areas will then be further aggregated to larger areas or regions to define a hierarchy of central places.

Modify delineation procedures to enable evolution and periodic updating of sets of districts for the 50 States that have program relevance and provide a meaningful basis for reconciling potentials of individual areas with regional and national potentials. Develop supporting analytical procedures; for example, some based on national input-output relationships and employment that can quickly and easily produce an input-output flow matrix for any county or multicounty area.

### 2. A development district information system (DDIS)

A development district information system has been established. It will maintain current information about multijurisdictional planning in development areas. These include councils of governments, economic development districts, resource conservation and development project areas, and State designated planning and development districts. It will contain information on staffing, funding, legal basis, activities of the districts, description and characteristics of projects and publications by or about the district. So far as funding, personnel and other working constraints permit, this information will be supplied to action agencies to assist them in coordinating and directing their activities and will be used for research on economic development.

### 3. Economic structure, or intersector relationships

At Oklahoma, a study is underway to determine the interindustry and economic structure of the Ozarks Region. Work during the past year included an expansion of a similar study for Oklahoma and an investigation of various techniques to be used in the Ozark study. The expansion consisted of dividing the State into three districts and analyzing each district's potential for growth. The techniques investigated were: measuring leakage from an input-output model;

measuring the effect that size of a model has on a multiplier; deriving district input-output models from the State model. A review of social accounting systems has been made and the system model to be used on the Ozarks Region has been developed. Data on the regional infrastructure are being collected, and will be used to measure the impact of public investment. A procedure for determining the capital coefficients for a State model has been completed.

Research was also conducted on the national input-output and labor matrixes. The 82-sector input-output matrix developed by BLS was expanded to 109 sectors, and included detailed agricultural sectors. Output multipliers for the 17 agricultural sectors were obtained. A computer program was written to give the direct and indirect requirements of an industry from 16 groups of other industries in addition to the industry requirements. A matrix of labor requirements for 156 occupations in 137 industries developed by BLS was transformed into a labor matrix of 32 occupations and 109 industries, which is conformable with the industry input-output matrix. The two will be combined to produce employment multipliers. This will be redone, using the BLS 1963 input-output model.

Six basic methods of measuring economic growth or development were studied. Of the six, three are used to measure economic efficiency (economic growth) while the other three shed more light on equitable distribution of income. The three efficiency measures considered are: economic aggregates, such as population and personal income, measures of central tendency such as per capita income, and growth rates of aggregates and ratios. The equity measures are: the gap between economic aggregates or ratios, the proportion of people below some prescribed poverty line and the relative income shares which fixed groups of the population receive. Each measure serves a useful purpose but, unless carefully interpreted, can be misleading.

#### 4. Appraisal of growth potentials

A linear programming model is being prepared to assess strategies for developing agriculture, manufacturing, services, and the public sector as alternative means of reaching development goals. Given population and income targets, the model selects feasible, efficient combinations of activities from among more than 100 manufacturing, agricultural and service activities to meet the needs of the area. The activity sectors were completely revised this year to encompass a wider range of nonagricultural commodities and services. The agricultural sector was revised to draw upon the recently available 1964 Census of Agriculture for descriptions of available agricultural resources and for technical coefficients. This revision facilitates broader applicability of the model among the various agricultural regions of the U.S. When the model is completed, it will be used on several low-income rural areas to help point to some feasible development strategies.

#### 5. Recent changes in manufacturing among urban and rural areas

These changes are being studied at Pennsylvania. Preliminary and incomplete tabulations of manufacturing employment changes between 1960 and 1966 among



communities under 25,000 population revealed some relations between size of center and manufacturing growth. Growth rates in manufacturing decreased with size of center, as did the proportion of centers with gains in employment, over the six-year period. Centers with population from 10,000 - 24,999 increased an average of 17.5 percent in manufacturing employment, while centers of 1,000 - 2,499 averaged 11.7 percent. Eighty-six percent of the centers of 10,000 - 24,999 had gains in employment while only 53 percent of the 1,000 - 2,499 group expanded employment.

A micro-simulation model was developed. The model contained probability tables for death, birth, marriage, starting school, dropping out of school, getting a job, number of weeks worked, and salary. The probability tables differentiated on age, race, sex, educational level, and marital status. A one-tenth of one percent sample of the 1960 population (183,000 people) was simulated for a ten-year period. The changing characteristics of the population can be simulated with this model. The model can now be used to test how population characteristics would change if some of the probabilities, such as dropping out of school, getting a job, working more weeks, etc., were changed.

#### 6. A national migration matrix

A national migration matrix has been developed, based on the 1960 population and showing the 1955-1960 movement of people among 121 economic subregions. This matrix was transformed into a transition probability matrix to use in a Markov model. The Markov model will be estimated to determine the implied equilibrium population distribution. This will then be used to shed light on the difficulties some areas may have in stimulating economic development.

#### PUBLICATIONS: ECONOMIC STRUCTURES

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#### REGIONAL INCOME ANALYSIS

Major objectives of this research are:

1. To measure and explain variations in personal income within and among regions. Data on income are developed with respect to:
  - (a) Source -- labor, property, etc.
  - (b) sector of origin -- agriculture, manufacturing, services, etc.
  - (c) time -- intratemporal and intertemporal, and
  - (d) demographic attributes -- race, age, education, etc.

2. To estimate effects of ongoing or proposed public policies or programs upon variations in personal income within regions, among regions, and nationally.

Research progress in FY 1970:

This work was initiated late in FY 1970. Progress was limited to development of plans for future research including coordination of regional income analysis with other work of the Branch and Division. Some summaries of personal income by SMSA and nonSMSA regions of the United States were prepared for administrative use. This work will be expanded in pursuing the first objective of this research.

Service work: Requests from the Office of the Secretary for analysis in relation to rural development problems required about 0.2 professional man-years.

Future plans: Income data will be summarized for selected regions in support of analysis of regions with varying rates of development in the past two decades. Specific studies will focus on areas within the Tennessee River Valley and on other regions. These studies will be completed following availability of income, employment and other data from the 1970 Censuses.

#### PUBLICATIONS:

None.

#### LOW-INCOME AGRICULTURE

The major purpose of this research is to appraise the farm and farm-nonfarm adjustments needed to enhance the economic well-being of low-income farm people and identify implied private and public actions needed to assist these adjustments.

More specifically, the objectives of this research are:

1. To analyze current and prospective changes in the agricultural structure of selected problem areas and their implications for farm employment opportunities, and to appraise nonfarm employment opportunities in or near these areas.
2. To delineate target groups among low-income farm people according to their age, education and other factors influencing their economic potential.
3. To appraise policy alternatives to assist low-income farm people in improving their economic productivity.

## Current progress and future plans:

A study of the alternatives open to low-income farm people in the flue-cured tobacco area of Virginia and the Carolinas is underway. Since 1950, despite considerable expansion of employment opportunities in the area's nonfarm sector it has been insufficient both to keep pace with the natural increase in the labor force and offset the steady decline in farm employment. Partly for this reason, a substantial flow of outmigration has taken place. Given the prospect of further declines in local farming opportunities, the study appraises the need for more rapid expansion of the nonfarm sector and a substantial upgrading of the education and working skills of the employable farm population.

Future plans: Similar studies will report on the situation of low-income farm people in the burley tobacco areas of Kentucky and Tennessee, and a major concentration of small cotton farms along the upper Mississippi Delta.

## PUBLICATIONS:

None.

## REGIONAL PROGRAMS GROUP

The primary purpose of this research is to study the effects of public policies and programs on regional growth and development, to identify significant interregional economic and social interrelationships as well as regional differences and to systematize implications for feasible program alternatives. More specifically, the objectives of this research are:

1. To identify area objectives and purposes in appropriate regional and national contexts and relate them to policy variables used to implement programs.
2. To analyze the roles of economic and social organization, and of economic growth and decline, and to identify implications for formulating and implementing programs for area development.
3. To develop and refine analytic techniques used in impact studies and prepare frameworks for tracing changes in factors affecting the local economy, such as composition of the population, employment, income, health, education, and welfare.

## Current progress and future plans:

### 1. Rural Economic Indicators

Economic well-being varies geographically and is associated with indicators of local general business activity and with rurality. Variations in economic well-being in the U.S., in 1960, were measured by (1) aggregating counties into some 500 multicounty areas, and (2) aggregating the multicounty areas into five groups according to urban orientation of the areas. The degree



of urban orientation was greatest in Group 1 and declined through Group 5. Economic well-being, as measured by income level, income distribution, education, and general business activity ranked highest in Group 1. The level of well-being declined with the degree of urban orientation, except in Group 5. The level in Group 5 areas, which are more rural than Group 4 areas, was generally higher than in Group 4 areas. Group 5 areas are related to commercial agricultural regions, while most group 4 multicounty areas are located in the Appalachian Region, Coastal Plains, and Mississippi Delta. Economic trends in the 1960's, based on population and employment changes, show growth occurred irrespective of the level of economic well-being in 1960.

Future plans: Indicators for each type of district will be derived for other districts that have significant program relevance, and the indicator components will be refined to attempt to meet more fully the need for program information on the causes of differential economic progress among districts.

## 2. Urban orientation related to economic growth

A two-dimensional criterion -- population density and urbanity of the population -- provides a basis for identifying the orientation of counties of rural and urban activities within the county. This framework differentiated six kinds of counties ranging from most urban-oriented (Group 1) to least urban-oriented (Group 6). The framework is useful as a tool for studying economic activity and organization of counties both similar and different in urban orientation. It was used to analyze the relationship between urban orientation and the economic growth of counties. The economic well-being of county residents was found to vary directly with urban orientation in 1960. Between 1950 and 1960 population and employment growth also varied directly with urban orientation. But during 1960-66, population growth slowed considerably in Group 1, moderately in Groups 2 and 3, and accelerated in Groups 4 and 5. In Group 6, the population decline of the 1950's was arrested. The patterns of growth and development that emerge from the use of the urban-oriented framework differ from the patterns revealed by other commonly used geographic frameworks. Consequently, they provide additional insight into the process and problems of rural development and contribute to the formulation of sounder policies and programs for poor and disadvantaged people in low-income, slower growing areas. The results of this study were published.

A method of identifying and ranking potential economic development centers was developed and applied to the Ozark Region. Data used were employment in 32 industries adjusted for overall U.S. and sector changes. An index was computed that summarized these data for one county in relation to all others in the region. Results show that centers with growth potential included counties with major population centers, with one basic activity supplanting another, and with new functions emerging without a prior base. Thus, the index isolated places which would have been overlooked using common indicators such as size, urbanity, net migration, and income. The results of this analysis were published.

Future plans: Immediate plans are to use the urban orientation framework to determine how and to what extent adjustments within agriculture are influenced by the proximity of farms to cities or systems of cities. The classification will also be applied to further sets of multicounty districts that together cover the United States. Further studies will analyze the economic potential and related problems of each type of district.

### 3. Appraisal of the economy of regions and small areas

A study of economic trends and changes in the 1960's in the Iowa Rural Renewal Area (Appanoose and Monroe Counties), show that the level of economic activity increased in the area but was clearly below the level for the State. Economic trends suggest that to provide economic opportunities in the area, by 1980, comparable to those available, on the average, to all residents of Iowa, the annual rate of growth in the renewal area in the 1970's must be double the rate of the 1960's. New approaches are required to double the annual rate of growth. These include: (1) Increases in employment in the manufacturing sectors not related to agriculture, and (2) comprehensive planning at the multicounty level. These plans should include ways to expand employment and improve such facilities and services as housing, water supplies, sewage disposal facilities and medical and educational services. These results were published.

A broad range of socioeconomic information concerning trends in the levels of economic activity and structural change in Washington State was accumulated, analyzed, and disseminated. Of particular interest to rural areas is the finding that while large scale farms constitute only 2 percent of all farms in the State, they produce nearly a fourth of all farm sales.

Future plans: Work has begun on a systematic appraisal of the economic potential of each of the types of districts classified by urban-orientation. Initial studies will use a methodology similar to that applied to the Iowa Rural Renewal Area.

### 4. Medical problems in rural areas

A published study shows that the problem of rurality, poverty, and health is a circular one. In rural areas, income is generally lower and medical services are generally poorer and less accessible than in urban areas. At the same time, the incidence of chronic illness, which limits work activity and thus reduces income, increases with both rurality and low family income. Farmers generally experience a high rate of this type of illness. And the shortage of emergency services in rural areas contributes to the very high accident fatality rate in farming. Low incomes and sparse populations also prevent rural areas from competing effectively in the medical marketplace; consequently, deficiencies exist in the quantity of rural-located medical personnel and facilities. Although general practitioners are evenly distributed by population density throughout the country, areas of high population density and high household incomes attract more specialists and

hospital-based physicians. As a result, rural people often do not get the quality of care available in urban areas. Thus, in terms of both need for medical care and availability of medical services, the rural poor often lack even minimally adequate health care. Ameliorative programs are underway. They include increasing the supply of services, reorganizing existing services and developing new ones on the basis of regional needs, and removing income and other major handicaps to the ability of the poor to obtain medical care.

In eight Michigan counties, it was found that the medical industry is very important in the economy, attracting a large share of financial support from nonregional sources and employing large numbers of regional personnel. Potential inefficiencies in the medical care delivery system were found, causing a reduction in the funds which otherwise could be used to improve medical care for the rural poor.

#### 5. Rates of return to education

Three dimensions of financing schooling expenditures among Census Divisions within the United States were studied: (1) the overall profitability of U.S. schooling investment; (2) the ability to invest; and (3) the spillover benefits from schooling from one division to another through migration. Investment in schooling in the U.S. as a whole during 1959-60 yielded a rate of return between 12 and 13 percent. However, divisions losing schooling benefits through migration to other divisions incurred rates of return from their own point of view lower than the rate of return on total expenditures in the division. The opposite was true of returns on investment in divisions having immigration.

The ability to invest showed that divisions with high expenditures did not necessarily exert more effort than divisions whose expenditures were low. Instead, expenditure levels were closely associated with ability to invest.

The assumption was that expenditures within a division should be geared to ability adjusted for net spillover benefits with total expenditures at an efficient level. Investment in divisions incurring spill outs was financed partially by divisions gaining the benefits. Federal funds could be used to supplement the equal-effort and equitable divisional funds to bring total expenditures up to an efficient level (\$766 per student), yielding a total rate of return in all divisions of 10 percent.

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Area Analysis Branch, An economic analysis of the Iowa rural renewal area. Econ. Res. Serv. AER 181. 54 pp. June 1970.

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ERS-451. 4 pp. July 1970

Hines, Fred, Tweeten, Luther, and Redfern, Martin. Social and private rates of return to investment in schooling, by age-sex groups and regions. The Journal of Human Resources, Vol. 5, No. 3. 318-340 pp. Summer 1970.

Kuehn, John A. and Bender, Lloyd D.. An empirical identification of growth centers. Land Economics, Vol. XLV, No. 4. 435-443 pp. November 1969.

Wirth, M. E. and Loomis, R. A. Washington's agriculture and its environment. Wash. Agr. Exper. Sta. Bul. 718. 28 pp. January 1970.

## APPENDIX A

### ECONOMIC DEVELOPMENT DIVISION WORK UNITS ACTIVE IN F. Y. 1970, BY RESEARCH GROUP

#### HUMAN RESOURCES BRANCH

##### Population Studies

ED 1-1-54-00 (D. C.)  
1-2-11-01-X1 (Ga.)  
1-2-26-01 (Mo.)  
1-2-54-00 (D. C.)  
1-5-06-X1 (Cal.)

##### Manpower Studies

ED 2-1-05-01-X1 (Cal.)  
2-1-05-23 (Cal.)  
2-1-30-01 (N. H.)  
2-1-33-01 (N. Y.)  
2-1-40-01 (Pa.)  
2-1-54-00 (D. C.)  
2-5-20-01 (Me.)  
2-6-33-01 (N. Y.)

##### Income and Level-of-Living

ED 3-1-54-00 (D. C.)  
3-2-19-01 (La.)  
3-2-54-00 (D. C.)  
3-3-16-01 (La.)  
3-3-18-01 (Ky.)  
3-3-24-01 (Minn.)  
3-3-33-01 (N. Y.)  
3-3-50-01 (Wash.)  
3-5-33-01 (N. Y.)  
3-6-18-01 (Ky.)

##### Poverty Analysis

ED 3-4-37-01 (Ohio)  
3-4-54-00 (D. C.)  
4-1-04-01 (Ark.)  
4-1-19-01 (La.)  
4-1-19-01-X2 (La.)  
4-1-19-01-X3 (La.)  
4-1-19-01-X4 (La.)  
4-1-25-01 (Miss.)  
4-1-26-01 (Mo.)  
4-1-40-01 (Pa.)

##### Poverty Analysis (cont.)

ED 4-1-43-01 (S. C.)  
4-1-54-00 (D. C.)  
4-2-54-00 (D. C.)  
4-4-23-01-X1 (Mich.)  
4-5-04-01 (Ark.)

#### COMMUNITY FACILITIES BRANCH

##### Government Services

ED 5-1-23-01 (Mich.)  
5-1-24-01 (Minn.)  
5-1-36-01 (N. D.)  
5-1-50-01 (Wash.)  
5-1-54-00 (D. C.)  
5-2-15-01 (Ind.)  
5-2-23-01 (Mich.)  
5-2-49-01 (Va.)  
5-2-54-00 (D. C.)  
5-3-54-00 (D. C.)  
5-4-54-00 (D. C.)  
10-1-33-01 (N. Y.)

##### Housing and other Community Facilities

ED 6-1-04-01 (Ark.)  
6-1-37-01 (Ohio)  
6-1-37-01-X1 (Ohio)  
6-1-54-00 (D. C.)  
6-2-54-00 (D. C.)

#### AREA ANALYSIS BRANCH

##### Basic Growth Studies

ED 7-1-54-00 (D. C.)  
7-2-54-00 (D. C.)  
7-3-54-00 (D. C.)  
7-9-26-01 (Mo.)  
7-9-46-01 (Tex.)  
7-9-54-00 (D. C.)  
7-10-24-01 (Minn.)

AREA ANALYSIS BRANCH (cont.)

Economic Structures

ED 8-4-54-00 (D. C.)  
8-5-38-01 (Okla.)  
8-5-54-00 (D. C.)  
8-6-40-01 (Pa.)  
8-7-54-00 (D. C.)  
8-8-54-00 (D. C.)  
8-9-54-00 (D. C.)

Regional Programs

ED 9-1-54-00 (D. C.)  
9-2-54-00 (D. C.)  
9-3-54-00 (D. C.)  
9-4-54-00 (D. C.)  
9-5-26-01 (Mo.)  
9-5-38-01 (Okla.)  
9-8-50-01 (Wash.)  
9-9-38-01 (Okla.)

Low Income Agriculture

ED 7-11-54-00 (Wash.)

Regional Income Analysis

ED 11-1-54-00 (D.C.)



## APPENDIX B

### ACCUMULATIVE LIST OF AGRICULTURAL ECONOMICS REPORTS RELATED TO THE ECONOMIC DEVELOPMENT DIVISION

- Area Analysis Branch. An Economic Analysis of the Iowa Rural Renewal Area. AER-181. ERS-EDD. June 1970. 54 pp.
- Baum, Samuel; Friend, Reed and Stansberry, Robert R, Jr. The Hired Farm Working Force of 1961. AER-36. ERS-ESAD. May 1963. 57 pp.
- Beale, Calvin L. and Bogue, Donald J. Recent Population Trends in the United States with Emphasis on Rural Areas. AER-23. ERS-Farm Population Branch. January 1963. 48 pp.
- Beale, Calvin L.; Hudson, John C. and Banks, Vera J. Characteristics of the U.S. Population by Farm and Nonfarm Origin. AER-66. ERS-ESAD. Dec. 1964. 24 pp.
- Berry, Brian J. L. Strategies, Models, and Economic Theories of Development in Rural Regions. AER-127. ERS-EDD. December 1967. 43 pp.
- Beverly, Lucia H. Status of Water and Sewage Facilities in Communities Without Public Systems. AER-143. ERS-EDD. October 1968. 20 pp.
- Bird, Alan R. Poverty in Rural Areas in the United States. AER-63. ERS-RDED. November 1964. 46 pp.
- Bird, Alan R. and McCoy, John L. White Americans in Rural Poverty. AER-124. ERS-EDD. November 1967. 18 pp.
- Bird, Ronald and Inman, Buis T. Income Opportunities for Rural Families from Outdoor Recreation Enterprises. AER-68. ERS-RDED. March 1965. 31 pp.
- Bird, Ronald, Lucia Beverly and Anne Simmons. Status of Rural Housing in the United States. AER-144. ERS-EDD. September 1968. 31 pp.
- Bluestone, Herman. Focus for Area Development Analysis: Urban Orientation of Counties. AER-183. ERS-EDD. May 1970. 19 pp.
- Bowles, Gladys K. and Sellers, Walter E., Jr. The Hired Farm Working Force of 1963 with Supplementary Data for 1962. AER-76. ERS-ESAD. 63 pp.
- Bowles, Gladys K. The Hired Farm Working Force of 1964...A Statistical Report. AER-82. ERS-ESAD. August 1965. 30 pp.
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- Bowles, Gladys K. The Hired Farm Working Force of 1965...A Statistical Report. AER-98. ERS-EDD. September 1966. 29 pp.

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Cowhig, James D. Education, Skill Level, and Earnings of the Hired Farm Working Force of 1961. AER-26. ERS-ESAD. March 1963. 21 pp.

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Loomis, R. A. and Wirth, M. E. An Economic Survey of the Northern Lake States Regions. AER-108. ERS-EDD. February 1967. 132 pp.

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